

We claim:

1. A borehole drilling apparatus comprising: a drill string including a center bore and a distal end; a bit assembly at the drill string's distal end; a ported sub mounted on the drill string, the ported sub including an upper surface, a lower surface, a bore extending from the upper surface to the lower surface to which the drill string is connected, an axially extending port for providing fluid communication between the lower surface and the upper surface separate from fluid communication with the bore and a lateral port for providing fluid communication between the drill string center bore and an outer surface of the sub between the upper surface and the lower surface, the lateral port being substantially isolated against fluid communication with the axially extending port during operation; and a liner engaging surface encircling the lower surface, the liner engaging surface formed to releasably secure a borehole liner such that the drill string extends through the borehole liner with the bit assembly extending beyond a liner shoe of the liner with an opening between the drill string and the liner.
2. The borehole drilling apparatus as in claim 1 further comprising a seal extending about the sub operable to create a seal between the upper surface and the liner engaging surface.
3. The borehole drilling apparatus as in claim 2 wherein the seal extends about the ported sub to be operable to seal against fluid communication between the axially extending port and the lateral port.
4. The borehole drilling apparatus as in claim 3 wherein the lateral port opens between the liner engaging surface and the seal.
5. The borehole drilling apparatus as in claim 3 wherein the lateral port opens at the liner engaging surface.

6. The borehole drilling apparatus as in claim 1 wherein the lateral port opens at the liner engaging surface.
7. The borehole drilling apparatus as in claim 1 wherein the lateral port has a flow volume less than that of the bore such that a lesser fluid flow volume passes through the lateral port than the bore.
8. The borehole drilling apparatus as in claim 1 further comprising a valve to control fluid flow through the lateral port.
9. The borehole drilling apparatus as in claim 1 wherein the sub further includes a passage opening from the drill string center bore to provide fluid communication with a liner hanger setting component.
10. The borehole drilling apparatus as in claim 9 wherein the liner hanger setting component is integral with the sub.
11. The borehole drilling apparatus as in claim 9 wherein the sub further includes a valve in the bore, which is closeable to divert fluid pressure to the liner hanger setting component.
12. An apparatus for drilling a borehole defined by a borehole wall, the apparatus comprising: a drill string including a center bore and a distal end; a bit assembly at the drill string's distal end; a liner including an upper end and an inner bore and the liner being arranged with the drill string extending through the liner inner bore; a ported sub mounted between the drill string and the liner to support the liner on the drill string, the ported sub including an upper surface, a lower surface about which the liner is connected, a bore extending from the upper surface to the lower surface through which the drill string is connected to the ported sub, an axially extending port for providing fluid communication between the liner inner

bore and an upper opening to the upper surface of the sub, a lateral bore providing fluid communication between the drill string center bore and an outer surface of the sub between the upper surface and the lower surface, the lateral port being substantially isolated against fluid communication with the axially extending port during operation; and a seal adjacent the upper end of the liner and selected to seal against fluid flow upwardly about the liner upper end from an annulus formed between the liner and the borehole wall.

13. The apparatus of claim 12 wherein the drill string is connected by threaded connections into the bore of the ported sub.
14. The apparatus of claim 12 wherein the seal extends about the ported sub to seal about the ported sub against fluid communication between the axially extending port and the lateral port.
15. The apparatus as in claim 12 wherein the lateral port has a flow volume less than that of the bore such that a lesser fluid flow volume passes through the lateral port than the bore.
16. The apparatus as in claim 12 further comprising a valve to control fluid flow through the lateral port.
17. The apparatus as in claim 12 wherein the sub further includes a passage opening from the drill string center bore to provide fluid communication with a liner hanger setting component.
18. The apparatus as in claim 17 wherein the liner hanger setting component is integral with the sub.
19. The apparatus as in claim 17 wherein the sub further includes a valve in the bore, which is closeable to divert fluid pressure to the liner hanger setting component.

20. The apparatus as in claim 19 wherein the valve includes a seat to be sealed by a ball launchable from above the valve and the ball and seat are selected to be selectively openable to reopen the bore.
21. The apparatus as in claim 19 wherein the passage is positioned above the valve and the valve is positioned above the lateral port.
22. The apparatus of claim 12 wherein the seal is mounted on the ported sub.
23. The apparatus of claim 12 wherein the seal is mounted about the liner.
24. The apparatus of claim 12 further comprising a drill string bore valve in the drill string between the ported sub and the bit assembly.
25. The apparatus of claim 12 further comprising a tubing wall valve openable to form an opening through the drill string wall between the ported sub and the bit assembly.
26. A method for drilling a borehole comprising: providing a drill string of including a center bore, a distal end, a bit assembly at the distal end; hanging a liner from the drill string, thereby forming an annular space between the drill string and the liner and with the bit assembly extending from a lower end of the liner; positioning the drill string with the liner attached thereto in a borehole such that a second annular space is formed between the liner and the borehole wall; operating the bit assembly to proceed with drilling the borehole; and circulating drilling fluid down through the center bore of the drill string out through the bit assembly and down through the second annular space between the liner and the borehole wall, the drilling fluid returning up through the annular space between the drill string and the liner.

27. The method of claim 26 wherein the drilling fluid is circulated down through the second annular space from a port extending from the drill string that opens into the second annular space.
28. The method of claim 26 wherein after a selected depth is reached, the method further comprises hanging the liner in the borehole, disconnecting the drill string from the liner and pulling the drill string to surface, leaving the liner in the borehole.
29. The method of claim 28 the method further comprising inserting a cementing string and pumping cement through the cementing string to fill the second annular space.
30. The method of claim 26 wherein after a selected depth is reached, the method further comprises pumping cement down through the second annular space and up through the annular space between the drill string and the liner.
31. The method of claim 30 further comprising hoisting the drill string such that the bit assembly is positioned above the liner shoe and circulating fluid through the drill string to clear cement from the drill string.
32. The method of claim 26 further comprising providing a ported sub mounted on the drill string, the ported sub including an upper surface, a lower surface, a bore extending from the upper surface to the lower surface to which the drill string is connected such that the bore is in communication with the drill string center bore, an axially extending port for providing fluid communication between the lower surface and the upper surface but isolated from fluid communication with the bore; and a liner engaging surface encircling the lower surface, the liner engaging surface formed to releasably engage the liner for hanging on the drill string.